

ASSESSING THE CAPABILITY OF PROJECT MANAGEMENT PRACTICE ON INFRASTRUCTURE PROJECTS IN NORTHERN NIGERIA

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Abstract

The increasing lack of successful completion of large infrastructure public projects in Nigeria has given rise to the need to look at project environment with a view to confronting the challenges that face project success. This paper examines the project management (PM) philosophy as currently applied in managing infrastructure projects in Nigeria, with the intention of assessing its effectiveness in addressing issues necessary for successful project delivery. A quantitative survey employing an online questionnaire was used to solicit responses from 200 professionals on 40 selected multifarious projects across three regions in the North and Federal Capital Territory (FCT) in Nigeria. Twenty-one factors contributing to sound PM practice were identified from literature, which were later trimmed to 14 after validity and pilot test conducted on the questionnaire. A descriptive statistic is applied to determine the influence index value of the factors and their relative importance in PM practice in Nigeria. Spearman's rank correlation coefficient was used to examine the similarity or dissimilarity in the ranking of the factors amongst the respondents, who were categorized as clients, contractors and consultants. This study's finding shows "lack of favourable form of contract conditions", "weak stakeholders' relationship" and "poor leadership potential" as the major factors that lead to unsound PM practice in Nigeria. Previous studies indicate that the existing traditional project management system is short of encompassing issues of leadership potential and relationship management as other essential knowledge areas in project management. The study recommends a relationship-based framework for PM practice that would reflect issues relating to project team and their cross-functional and working relationship in project delivery. The outcome of this survey will benefit the Nigerian Government who is a major construction client, the private sector and the construction industry by providing data that can be utilized to develop PM services thereby increasing the success of infrastructure project delivery in Nigeria.

Keywords: Infrastructure projects, Nigeria, Project management, Project management practice

1. Introduction

The successful completions of infrastructure projects are of critical importance to the Nigerian economic transformation agenda (Ademola, 2014). Achieving excellence in procurement process through effective project management (PM) is at the heart of what makes a construction project succeed (Shuaib, 2016; Burger, 2016). A global review of the 2008 projects survey report by the US Standish Group International, SGI (2009), showed that only 32% projects were successful, 44% challenged and 24% were failures (Araújo, 2014). The major causes of infrastructural project failure have been linked to project management deficiency that involves lack of teamwork, commitment to success, poor relationship, ethical issues, communication gap, risk challenges and ineffective project leadership (Ikediashi, *et al.*, 2014).

PM today is facing a paradigm shift from the traditional project management (TPM) approach (hard system) that is planning, and control based, to relationship-oriented philosophy (soft) that highlights the importance of people and working relationship (Meng and Boyd, 2017). This collaborated the view of Shi (2011) in Araújo (2014) who observed that proper coordination of "Soft" and "Hard" PM system implementation creates the greatest value to organization with the least amount of investment. Another improvement strategy for PM practice is through PM improvement initiatives which include improving specific PM practices as well as developing a system that would help to improve specific practice (Araújo, 2014). Various studies have identified several issues relating to the TPM practice in Nigeria

These include studies carried out by Mafimisebi (2016); Shuaib (2016); Ekundayo *et al.*, (2013); Adeyemi (2013); Olasupo and Ibrahim, (2012) to mention a few. The studies show that there less coverage has been given to the effectiveness of a PM system in achieving project success by encouraging innovation, value added principle, effective communication, collaboration, non-adversarial relationship and leadership structure in project delivery.

Many projects in Nigeria have been observed to have an unacceptable outcome due to ineffective management approach (Shuaib, 2016; Mafimisebi, 2016; Ekundayo, *et al.*, 2013), therefore, the need for effective PM skills and strategies that enhance innovation and creativity are essential requirement in planning and execution of construction projects in Nigeria (Adeyemi, 2013; Olasupo and Ibrahim, 2012). A close look at the foregoing description of the effectiveness of an appropriate PM approach and factors attributed to the continued failure of infrastructure project in Nigeria can show that the continued poor performance of large infrastructure projects in Nigeria could be attributed to ineffective project management approach, hence the need for this study. This collaborated the study of Olasupo and Ibrahim, (2012) who stated that:

...most investigators result" on project management framework (PMF) are inconclusive' and specific to peculiar environment in which the studies were conducted". Nigerian based studies are few and far in-between. Thus, the need to further examine the conjecture.

This study is based on 14 factors for a sound PM practice. These are: unfavourable framework and policies; weak relationship; poor leadership; lack of regulatory body for PM practice; absence of clear defined responsibility; lack of teamwork and commitment; ineffective risk allocation; traditional culture of the stakeholders; uncontrolled scope, lack of motivation; lack of understanding of the project and business environment; lack of established project success criteria; lack of competent project manager and lack of understanding of PM as a specialization.

The 14 factors were refined from the 21 factors identified in different studies by Meng and Boyd (2017); Ikediashi *et al.*, (2014); Ekundaya (2013) and Potts (2006). The aim of this study is to determine the relative presence of these factors in PM practice from the perspectives of clients, consultants and contractors with a view to establish their relative importance in the success of infrastructure projects in Nigeria. The study considered data obtained from professionals on 40 selected construction projects across the three (3) Northern regions and FCT in Nigeria.

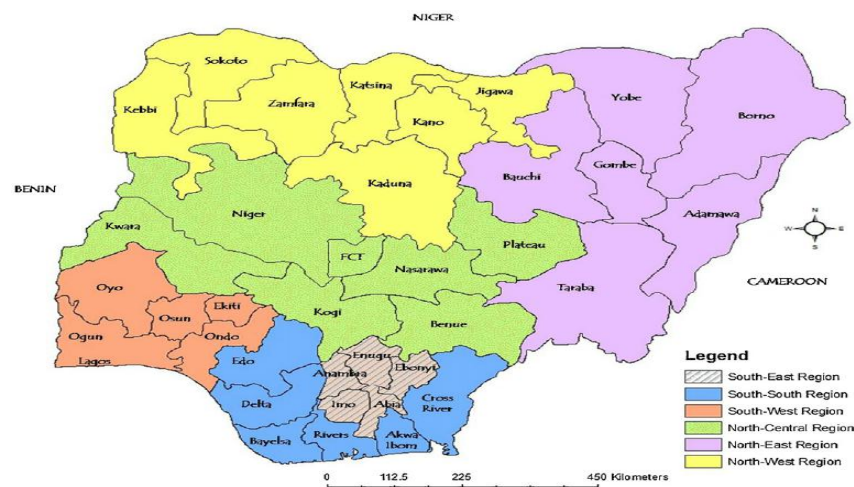


Figure 1: Map of Nigeria

The paper is structured into five sections: Section 1 discusses the research objectives and the theoretical framework that formed the base upon which the research was built. Section 2 provides a review of literature on PM practice and its various approaches including the rhetoric and realities of PM practice in Nigeria. Section 3 discusses the research methodology adopted for the study. In section 4, the research findings and discussion were provided. Section 5 is conclusions and recommendation for further study.

2. Literature Review

In an attempt to address the problem of poor PM practice in Nigeria, Government as a major client has been advised to lead the campaign to change the traditional industry approach to PM services (Ekundayo, *et al.* 2013). Improving project success has become economically necessary as demonstrated by examination of the nation infrastructure deficits, which require an investment of about \$10 billion USD annually for the next 10 years (Sunusi, 2012 in (Sunusi, 2012 in Solomon *et al.*, 2015). The need for improvement in PM practice, with a view to determine the appropriate approach for managing large infrastructure projects in Nigeria is necessary. The PM approach should reflect good orientation, leadership structure; value added principles, collaborative relationship and a particular evaluation mechanism to measure output/performance as emphasized by Olasupo and Ibrahim, (2012).

2.1 Project Management (PM) Approach

PM management is a managerial discipline that can be applied to any procurement system for the delivery of construction projects (PMI, 2008). The increasing need to tackle challenges associated with increasing project complexity, large capital investment, widely dispersed project participants; stringent quality standards, escalating cost, environment shocks, increasing stakeholders' power and advancement in information and communication technology (ICT) have influenced approaches to PM in a different way (Olasupo and Ibrahim, 2012). Project context is crucial for successful project management; hence examining what constitutes a project and the nature of its stakeholders is critical in selecting the appropriate PM approach to manage the project (Mafimisebi, 2016). Any method used affects budget, schedule, quality, and the involvement of the project owner (Shofoluwe, 2016).

According to Bentham (2012) a successful PM approach enables the organizations to achieve project efficiency, by addressing both internal and dynamic external constraints. A well-defined, properly chosen and strictly followed PM approach provides a firm guarantee that the job will be done on time, within budget and to the specified quality and specification (McConnell, 2010; Potts 2006). In another study, improper PM philosophy employed on large scale projects can lead to both time and cost overruns (Potts, 2008, Ikediashi, *et al.*, 2014). Similarly, over reliance on an improper project management approach can be destructive and can lead to project failure (Mafimisebi, 2016). Potts (2008) reported that team integration, collaborative relationship, and effective risk allocation and project leadership enhance success in project delivery. This collaborated the view of Ofori (2012) who observed that temporary leadership potential is an essential requirement in PM services and further added that a system that can delegate a leadership authority must be created. In a case study research on London Heathrow terminal 5 (T5) project in the UK, Potts (2008) attribute the success of the project to the PM philosophy used. In another study, effective relationship management among project stakeholders was noted to add value to, and enhance project performance (Jeloda *et al.*, 2016, Meng and Boyd, 2017)

2.2 Project Management Practice in Nigeria

There are two types of PM approaches, the executive project management approach (EPM) and non-executive (traditional) approach (Ekundayo *et al.*, 2013). Despite the inherent deficiencies and the resultant project failure, the traditional PM approach is still widely used to manage large infrastructure projects in Nigeria (Ekundayo *et al.*, 2013). Although the traditional approach is not appropriate for large projects in Nigeria (Odusami *et al.*, 2003) and equally not a “sufficient condition for project success” (Olasupo and Ibrahim, 2012), there are still evidences which indicate an appreciable usage on many public projects in Nigeria. Additionally, the approach has been reported to be defective and not promising in delivering large projects on time and within budget both in the UK- (Potts, 2008) and to construction client in Nigeria (Ekundayo *et al.*, 2013), and short of providing efficient project leadership, effective communication and creation of integration system and problem-solving skills. In addition, managing project’s scope, stakeholders and risks are most times cumbersome and difficult (Ekundayo *et al.*, 2013); PMI, (2008).

Similarly, the EPM approach is equally widely used on many large public projects. For instance, in a study by Mafimisebi (2016) on PM practice in Nigeria, 9 capital infrastructure projects were studied and several causal factors were identified that contributed to project failure: weak stakeholders relationship; absence of clear defined responsibility for project monitoring and control; uncontrolled scope and plans features; lack of understanding of the project and business environment; leadership ineffectiveness and non-established project success criteria. The resultant failure projects in Nigeria was a result of PM deficiency attributed to the realities of the project characteristics including the contract used, attitudinal and relationship issues and unfavourable framework and policies (Shuaib, 2016). According to Ekundayo *et al.*, (2013), the use of EPM approach on projects in Nigeria is identified to have the following barriers which includes: Lack of proper awareness of the PM profession; traditional culture of the stakeholders, lack of understanding of PM as a specialization; lack of demand; client’s behavior and lack of motivation, shortage of PM expertise, lack of a regulatory body or assessing organization (Ekundayo *et al.*, 2013).

3. Research Methodology

The review of literature on PM practice provided the theoretical basis for developing the research framework used in this study. A catalogue of 21 variables as shown in table 2 comprised of commonly cited factors for improved PM practice was extracted from the reviewed literature (Mafimisebi 2016;; Shuaib, 2016; Ekundayo ., 2013; Olasupo and Ibrahim, 2012;; Adeyemi, 2013; Potts, 2008). Although the 21 variables as listed in table 2 did not represent a complete inventory of generic factors contributing to PM failure, but are the most often cited in literature relating to successful PM practice. Semi-structured interviews were conducted with group of researchers and industrial experts who were knowledgeable and experienced in project management practice. This led to a list of 14 total variables shown in table 4 that were used for this study. The questionnaire was pre-tested through a pilot study to ensure its practicability and reliability in the Nigerian context. Comments and suggestions provided by researchers and practitioners contributed its modification and finalization.

3.1 Preliminary Investigation

The preliminary investigation for this study covered a test for validity and normality. These according to Ikediashi *et al.*, (2014) should be conducted to ensure that the study met the required standard for analysis. To demonstrate validity, the questionnaire was subjected to thorough review and cross-examination of contents by two academic researchers in the university and three PhD students. This

established its contents' validity. The normality of the 14 variables was examined using tests for skewness and kurtosis. The observed values of skewness and kurtosis are tested against the null hypothesis of zero. For a normal distribution, the values of skewness and kurtosis are always zero (Ikediashi *et al.*, 2014).

A survey research approach was adopted because of its rapid approach in data collection, economy of the design and additional advantage of identifying attributes of a large population from a group of individuals (Olawale and Salimonu, 2011). A questionnaire was used as the main instrument of data collection. The questionnaire was written in two-parts. Part one sought general information about personal characteristics and experience of the respondents among others. In part two, the respondents were asked to rate how each of the 14 factors contributed to unsound PM practice in the delivery of infrastructure projects in Nigeria. The survey was conducted amongst and within organizations, ministries and private practitioners with experience in infrastructure project delivery in Nigeria. The research was conducted on projects within Northern Nigeria, covering North-East, North-West, North Central regions and the FCT, Abuja in Nigeria. Twelve projects were identified within each zone and 4 projects in FCT, making a total of 40 identified projects. 200 questionnaires were distributed at the rate of 5 numbers per project. On the whole, 75 completed questionnaires were returned out of the 200 distributed. This represents 37.5% of the total number distributed which in the opinion of Meng and Boyd, (2017); Shuaib and Dahiru, (2014) indicate an adequate response rate.

A scale of 1-5 was used to solicit responses from the respondents, where 1 represented 'strongly disagree', 2 'disagree', 3 'neutral', 4 'agree' and 5 'strongly agree'. Data collected was analysed using descriptive statistical tools. The descriptive statistical tools used were percentages, tables, and mean. Relative importance index (RII) was used to rank the perception of relative importance attached to the identified factors for effective PM practice in Nigeria. This method was previously used by Ikediashi *et al.*, (2014) in a study to analyse project failure factor for infrastructure projects in Saudi Arabia and by Shuaib (2016) in ranking the importance of factors contributing to sound project governance in developing countries. The relative importance index is given by Eqn (1) as

$$(RII) = \frac{W}{AN} \quad (1)$$

where: W is the weight awarded to each variable by the respondents and ranges from 1 to 5; A is the highest weight = 5 and N is the total number of respondents (75) in this study. Spearman's rank correlation was used to examine the level of agreement among the group of responses, and is given by:

$$r_s = 1 - \frac{6 \sum_{i=1}^n d_i^2}{n(n^2 - 1)} \quad (2)$$

where: r_s = Spearman's rank correlation coefficient, d = the difference in ranking between the usage group and n = number of factors.

3.2 Identification of factors affecting sound PM practice for infrastructure Projects in Nigeria

Table 3.1 below present a list of 21 factors (sourced from literature) affecting sound project management practice on infrastructure project delivery. However, for the purpose of this study, a short list of 14 factors was considered as they constitute critical elements of sound PM practice in Nigeria.

The respondents were asked to rate their responses using a 5-point likert scale: 1=strongly disagree, 2-disagree, 3=somewhat agree, 4=agree and 5=strongly agree.

Table 3.1 : Factors affecting sound PM practice for infrastructure Projects

Factors affecting Sound PM practice	Authors
1. Weak stakeholders relationship	Potts (2008), Mafimisebi (2016) Shuaib (2016), Ekundayo <i>at el.</i> , (2013), Ikediashi, <i>et al.</i> , (2014);
2. Ineffective risk allocation	Potts (2008),
3. Poor leadership potential	Potts (2008), Ofori (2012) Mafimisebi (2016), Shuaib (2016), and Ikediashi, <i>et al.</i> , (2014);
4. Absence of clear defined responsibility for project monitoring and control;	Mafimisebi (2016)
5. Uncontrolled scope and plans features;	
6. Lack of understanding of the project and business environment;	
7. Non-established project success criteria	
8. Unfavorable framework and policies to achieve effective management	Ekundayo <i>at el</i> (2013); Shuaib (2016); Burger, (2016)
9. Lack of teamwork and commitment	Shuaib (2016), Mafimisebi (2016) Ekundayo <i>at el</i> 2013, Ikediashi, <i>et al.</i> (2014);
10. Ethical issues,	
11. Communication gap,	
12. Risk challenges	
13. Lack of Proper Awareness of the PM Profession;	Ekundayo <i>at el.</i> , (2013).
14. Traditional Culture of the Stakeholders,	
15. Lack of Understanding of PM as a Specialization;	
16. Lack of Demand;	
17. Client's Behavior and Lack of Motivation,	
18. Shortage of PM expertise,	
19. Lack of a regulatory Body or Assessing Organization for PM practice	
20. Poor planning,	
21. Quality of the team	

4. Results and Discussion

4.1 Demographic Survey of Respondents

Table 4.1 below presents the results of the demographic survey on the characteristics of 75 respondents who returned valid questionnaires for the study. The 75 valid responses were received from construction professionals of various academic qualifications ranging from BSc degree to professor. Professionals from both client, contractors and consultants' organizations constitute the different groups of respondents for this study. Their minimum work experience being 10 years and maximum, 30 years.

Table 4.1: Demographic Survey of Respondents

Variables	Category	Frequency	%
Professional Qualification	Architects	20	26.7
	Quantity Surveyors	21	28.0
	Civil Engineers	10	13.3
	Services Engineers	5	6.7
	Building Engineers	5	6.7
	Project Managers	14	18.6
	Total	75	100
Academic Qualification	Professor	-	-
	PhD	7	8.0
	MEng/MSc	32	42.7
	BSc	37	49.3
	Total	75	100
Years of Experience	5-10	-	-
	10-20	32	42.6
	20-30	26	34.7
	Above 30	17	22.7
	Total	75	100
Type of Organization	Client	13	17.3
	Contractor	17	22.7
	Consultants	45	60
	Total	75	100

The results as shown in table 4.1 above indicate a reasonable spread of respondents in terms of professionalism, working experience, qualifications and discipline.

4.2 Test of Agreement among Respondents

The respondents were categorized in groups namely clients, Contractors and Consultants. Spearman's rank correlation was used to examine the level of agreement among the responses from these groups. The results of the correlation coefficient at 5% significance level (two tailed) are shown in Table 3 below.

Table 4.2: Spearman's Rank Correlation Coefficient Result

Groups	Coefficient of Correlation
Client and contractor	0.754
Client and Consultants	0.800
Contractor and Consultants	0.822

Correlation is significant at 0.05 levels

In Table 4.2 above, correlation coefficients of three pair of group of respondents were shown, namely client/contractor, client/consultant and contractor/consultant. The results of the statistical analysis indicate a general consensus on the ranking of the factors responsible for unsound PM practice in Nigeria, as all groups showed significant loading of 75%, 80% and 82% respectively which indicates similarity in the way the factors were ranked.

4.3 Ranking of The Perceived Factors Affecting Sound PM Practice for Infrastructure Projects In Nigeria

The results shown in Table 4.3 present a relative importance index values of 14 different factors for sound PM practice in Nigeria ranging from 4.73 to 1.52 (average weighted). It can be seen that “lack of favourable form of contract conditions” and “weak stakeholders’ relationship”, with a mean index of 4.73 and 4.69 and an RII of 0.946 and 0.938 were ranked as first and second factors respectively. This is closely followed by “poor leadership potential”, with a mean index of 4.68 as the third rated factor.

Table 4.3: Results of Analysis for perceived Relative importance of factors

	Variables	Min	Max	Mean	RII	Rank
1	unfavourable framework and policies	3	5	4.73	0.946	1
2	Weak stakeholders relationship	3	5	4.69	0.938	2
3	Poor leadership potential	3	5	4.68	0.936	3
4	Lack of regulatory body for PM practice	3	5	4.65	0.930	4
5	Lack of team work and commitment	2	5	4.62	0.925	5
6	Absent of clear defined responsibilities for project monitoring and control	2	5	4.58	0.917	6
7	Ineffective risks allocation	1	5	4.53	0.906	7
8	Uncontrolled scope	1	5	4.28	0.856	8
9	Client behaviour and lack of motivation	1	5	4.27	0.853	9
10	Traditional culture of stakeholders	1	5	3.18	0.762	10
11	Lack of understanding of project environment	1	5	2.32	0.464	11
12	Non-established project success criteria	1	4	1.88	0.376	12
13	Lack of competent project manager	1	4	1.84	0.368	13
14	Lack of understanding of PM as specialization	1	3	1.52	0.304	14

“Lack of a regulatory body or assessing organization for PM practice” has been rated fourth with a mean index value of 4.65 and RII value of 0.930.

4.3.1 “Lack of favourable form of contract conditions” with a mean index of 4.73 and an RII value of 0.946 is rated the most important factor in sound PM practice in Nigeria. This emphasizes the importance of creating an enabling framework within which project managers can operate to discharge their duties. Although the roles and responsibilities of project Managers in infrastructure project delivery are very clear but enabling conditions for efficient performance is equally a must essential requirement (Ekundayo *et al.*, 2013). Nigeria construction industry is not far away from this situation. There exist absence of relevant infrastructure and enabling environment to support an effective PM process (Ekundayo *et al.*, 2013). The contract conditions in use on most infrastructure projects delivery in Nigeria did not recognized the importance of new PM trend that highlights the importance of people and their working environment. PM responsibility in creating a project team that encourages innovation to achieve continuous improvement and value added principle, enhance effective communication and non-adversarial relationship could not be traced in the JCT form of contract used on most project in Nigeria ((Ekundayo *et al.*, 2013). Same document did not recognized neither empowered the PM to carry out any form of leadership responsibility under the contract (Shuaib, 2016). In a study on the success of London Heathrow terminal 5 (T5) project in the UK, Potts (2008) observed that the new PM philosophy implemented through the use of terminal 5 (T5) agreements was

fundamental to the success of the project. Although T5 agreement is a unique legal contract in the construction industry, its usage on T5 project creates the platform for collaborative relationship, innovation, high performance standard and collective problem-solving strategy (Potts, 2008).

4.3.2 “Weak stakeholders’ relationship”, scored a mean index of 4.69 and an RII value of 0.938 thereby making it the second most important factor for a sound PM practice in Nigeria. Relationship management whether oriented objective or subjective measures as described by Yeung, *et al.*, (2009) is a sole responsibility of a PM. While the relationship-oriented objective measures consist of issues of claims, disputes, litigation/arbitration etc., the subjective measures on the other hand concerned with trust and respect, effective communication, harmonious working arrangement, long-term business, top management commitment, employee’s attitude, and reduction of paperwork. PM should have the capacity to develop an intra-organizational trust and inter-organizational teamwork within the team, a base upon which a system of collaboration and team integration could be established. Teamwork, commitment, and trust are essential relationship’s qualities within project team, all of which cannot be achieved without the help of a competent and capacitated PM (Jeloda *et al.*, 2016). However, favourable framework and policies are what give the PM the capacity to achieve these essential relationship’s qualities. Traditional relationship based on traditional approach to PM often lead to adversarial culture and poor performance (Meng and Boyd, 2017; Potts, 2008). This is what has been the practice in Nigeria for many years ago.

4.3.3 ‘Poor leadership potential’ “ with a mean index value of 4.68 and an RII value of 0.936 has been rated the third most important factor for a sound PM practice in Nigeria. According Ofori (2012), temporary leadership potential is an essential requirement in PM services and indeed one of the essential qualities of a PM. Power and authority for project leadership is derived from the documents forming part of the contract. Traditional approach is the current practice on most projects in Nigeria. In this approach, the PM is more of a coordinator with less influence on the project team. This collaborated the study of Mafimisebi (2016) who observed that leadership ineffectiveness is what seems to pervade in the management of projects in Nigeria. Therefore, to achieve effectiveness, PM must be seen as an investiture of an independent person or firm with the responsibility for the success or failure of the project (Ekundayo *et al.*, 2013).

5. Conclusion and Recommendation

This study examined PM philosophy as currently applied in managing infrastructure projects in Nigeria with a view to assessing its capability in addressing issues in successful project delivery. A quantitative survey was used to elicit response from professionals on 40 selected multifarious projects across three geo-political zones in the north and the federal capital territory (FCT) in Nigeria, namely, north-east, north-east and north-central zones. 14 factors in a sound PM practice were identified from literature. The relative presence and importance of these factors in PM practice in Nigeria was rated and analysed using an influence index value. Spearman’s rank correlation coefficient was used to examine the similarity or dissimilarity in the ranking of the factors amongst the respondents, which were categorized into clients, contractors and consultants.

Based on the ranking of the factors, “lack of favourable form of contract conditions” and “weak stakeholders’ relationship”, with a mean index of 4.73 and 4.69 were ranked first and second factors respectively. This is closely followed by “poor leadership potential”, with a mean index of 4.68 as the third rated factor. Also “Lack of a regulatory Body or Assessing Organization for PM practice” has been rated fourth with a mean index value of 4.65. Lack of team work and commitment, absence of

clear defined responsibility for project monitoring and control, and ineffective risk allocation were ranked as 5th, 6th and 7th factors respectively. Other with least relative importance index includes lack of understanding of PM as a specialization, lack of competent PM, and none established project success criteria as the 14th, 13th and 12th factors respectively. The test for respondents' agreement indicates a strong level of correlation amongst various groups of respondents which further demonstrate a certain level of reliability of the research findings.

The findings from this research identify PM factors that contribute to project failure. It is clear that the existing traditional project management system which concentrates on planning, monitoring and control of project variables is defective and inadequate for efficient delivery of projects to success. More so the framework is short of encompassing issues of leadership potential and relationship management as other essential knowledge areas in project management. This study therefore provides data that can be used to develop a new framework for PM philosophy that better reflects issues relating to the project team and their cross-functional relationship in project delivery. The recommended framework should be developed to incorporate the characteristics of construction environment in Nigeria, the best practice program of innovation and impact of globalization in project delivery. It is believed that the outcome of this survey will benefit government as the major construction client in Nigeria, private sectors and the industry as a whole through achieving greater success in infrastructure project delivery.

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